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REMARKS

This amendment is intended as a full and complete response to the Final Office action, dated March 24, 2004. In the Office action, the Examiner notes that claims 1-17 are pending, of which claims 1-17 stand rejected. By this amendment, claims 13 and 17 have been amended and claims 1-12 and 14-16 continue unamended.

In view of the amendments and following discussion, the Applicant submits that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicant believes that all of these claims are now in allowable form.

A. In the Specification

The Applicant has amended the specification to conform to the drawings. In particular, the Applicant has clarified that ADM 142_1 is the first ADM of the SONET ring 160, as opposed to ADM 162. Specifically, the Applicant has changed "The first ADM 162" to "The ADM 162", to avoid confusion regarding which ADM is considered the "first" ADM of the SONET ring 160. The Applicant submits that such change to the specification does not add new subject matter.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

A. Claims 1-12

The Examiner has rejected Claims 1-3, 11, and 12 as being obvious under 35 U.S.C. §103 over Norman, Jr. (US 5,742,605, issued April 21, 1998 hereinafter "Norman") in view of Lee (US 6,594,236, issued July 15, 2003). The Applicant respectfully traverses the rejection.

The Applicant's independent claim 1 (and similarly independent claims 4, 6, 8, and 11) recites features that the Applicant considers as being

inventive. For example, independent claim 1, recites:

> "In a communications system utilizing a digital cross-connect system (DCS) element management system (EMS) for managing DCS network elements and a SONET EMS for managing SONET add/drop multiplexer (ADM) network elements, apparatus comprising:
> a SONET ring network including a plurality of ADMs, said SONET ring network being managed by said SONET EMS;
> a plurality of DCS elements, each of said plurality of DCS elements being managed by said DCS EMS, at least one of said plurality of DCS elements including an ADM that is logically coupled to said SONET network and managed by said SONET EMS, said ADM being coupled to said at least one DCS by a digital link. (emphasis added).

Applicant's invention teaches at least one of the plurality of DCS elements includes an ADM that is logically coupled to the SONET network. In the exemplary embodiment of FIG. 1, the first DCS 140 includes a plurality of ADM denoted as 142_1, 142_2,142_3, and so on up to 142_n (collectively ADMs 142). The first DCS 140 also includes a plurality of input/output ports denoted as 144_1, 144_2, and so on up to 144_m (collectively ports 144). The DCS system 140 is capable of connecting signals between the various ports 144 and/or ADMs 142. By incorporating ADMs within the DCS a cost savings is realized since an ADM is necessary to connect to a SONET ring. Thus, the DCS 140 may communicate directly with SONET network elements such as ADMs formed into SONET ring structures. (See applicant's specification page 5, lines 28 through page 6, line 4).

Furthermore, referring to FIG. 3 of the applicant's invention "it is important to note that each of the DCS I/O modules 146_1 and 146_2, along with the DCS switching circuit 148, are physically included within a single hybrid DCS 140. However, according to the principles of the present invention, the ADM 142_1 is separated from the DCS 140 by a digital link (DL) 302, illustratively an STS-3 data link. Similarly, the ADM 142_2 is separated

from the DCS 140 by a digital link 304, illustratively an STS-3 data link." (See applicant's specification, page 10 lines 3-8).

By contrast, the Norman reference discloses in FIG. 5, "node 23 connects different rings and includes ring terminals 102, 105, and 108. These ring terminals are connected to other ring terminals at different nodes by spans 131, 132, 134, 135, and 141 respectively as shown on FIG. 3. The add/drop connections of the ring terminals are not shown. On FIG. 5, ring terminals 102, 105, and 108 are interconnected using DCS connections. The DCS connection is comprised of a DCS device or devices with the capability to interface, groom, and switch SONET traffic between ring terminals." (See Norman, col. 6, lines 42-51).

Nowhere in the Norman reference is there any teaching or suggestion of at least one of the plurality of DCS elements including an ADM that is logically coupled to a SONET network. That is, the Norman reference fails to teach or suggest a hybrid DCS element where the DCS element includes an ADM.

In the Office Action, on page 2, 2nd paragraph, the Examiner states that "Norman provides for a hybrid structure of a ring terminal, which 'are comprised of SONET add/drop muxes (ADMs)' (col. 4, lines 53-55), and a DCS connection comprising a DCS device." The Examiner concludes that "this hybrid structure that forms the connection between two rings is clearly representative of a DCS element, as in the present invention, that includes an ADM that is coupled to a SONET network." The Applicant submits that such conclusion is incorrect.

Norman merely discloses that a node includes one or more ring terminals, each of which has add/drop connections. Norman further discloses that the ring terminals are connected to each other via the DCS connections,

but nowhere in the Norman reference is there any teaching or suggestion that the ADMs are, in fact, included in the DCS elements to form a hybrid DCS element. The Norman reference goes out of its way to explicitly disclose that the ADMs are installed in the ring terminals, but there is absolutely not teaching or suggestion that these ADMs may be operably installed in the DCS elements. This is purely speculation by the Examiner without any foundation from the teachings of the Norman reference.

The Norman reference does not teach, infer, or suggest that such ADMs may be, could be, or are included in the DCS elements. It is certainly not inherent to include an ADM in a DCS element, nor does the Norman reference infer or suggest any desirability to do so. That is, Norman merely discloses a relationship between ring terminals and ADMs, as well as ring terminals and DCS connections. The Norman reference is completely silent with respect to the relationship, association, physical connectivity, and/or logical connectivity as between the ADMs and DCS connections. Thus, the Examiner's conclusion that the Norman reference teaches or suggests a hybrid DCS, i.e., a DCS element including an ADM that is logically coupled to the SONET network, is purely conjecture.

Moreover, the Norman reference fails to teach or suggest that such ADM that is included as an element of the DCS, is managed by the SONET EMS, as opposed to a DCS EMS. Rather, the Norman reference merely discloses that link terminals are comprised of SONET adds/drop muxes (ADMs), which are well known in the art. (See, Norman, col. 4, lines 53-55). Therefore, the Norman reference fails to teach or suggest the applicant's invention as a whole.

Furthermore, the Lee reference fails to bridge the substantial gap as between the Norman reference and the applicant's invention. In particular, the Lee reference merely discloses that an element management system

(EMS) serves to monitor the route alarm and propagational alarms generated from respective network elements, such as network elements 16, 18, and 20 disposed in the middle of the second linear network 110 (ADMs). (See, Lee, col. 1, lines 25-61). In other words, alarm routing is simply not managing.

Even if the two references could somehow be operably combined, the combined references would merely disclose terminal links comprising ADMs and an EMS managing such ADMs. Nowhere in the combined references is there any teaching or suggestion of "a plurality of DCS elements, each of said plurality of DCS elements being managed by said DCS EMS, at least one of said plurality of DCS elements including an ADM that is logically coupled to said SONET network and managed by said SONET EMS, said ADM being coupled to said at least one DCS by a digital link." In other words, the combined references fail to teach that a DCS element includes an ADM that is logically coupled to the SONET network.

Moreover, the combined references fail to teach that such an ADM that is included is a DCS element is managed by a SONET EMS, as opposed to being managed by a DCS EMS. That is, there is no teaching or suggestion in the combined references that the manager of the ADMs is capable of operably managing the ADM when it is part of the DCS element. Again, the Examiner is merely speculating that this can occur based on the fact that, since it is a manager of the ring, it must also be able to manage the ADM while being a part of the DCS element. Rather, the combined references are silent with respect to managing a hybrid DCS having an ADM. Thus, the combined references also fail to teach or suggest "a plurality of DCS elements, each of said plurality of DCS elements being managed by said DCS EMS, at least one of said plurality of DCS elements including an ADM that is logically coupled to said SONET network and managed by said SONET EMS." Therefore, the combined references fail to teach or suggest

the applicant's invention as a whole.

As such, the Applicant submits that independent claim 1, and similarly independent claims 4, 6, 8, and 11, are not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Furthermore, the claims 2-3, 5, 7, 9-10, and 12 respectively depend from independent claims 1, 4, 6, 8, and 11 and recite additional features thereof. As such, and at least for the same reasons as discussed above, the Applicant submits that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore the Applicant respectfully requests that the rejections be withdrawn.

B. Claims 13-17

The Examiner has rejected Claims13 and 17 as being obvious under 35 U.S.C. §103 over Norman, Jr. (US 5,742,605, issued April 21, 1998 hereinafter "Norman") in view of Huang et al. (US 6,389,015, issued May 14, 2002, hereinafter "Huang"). The Applicant respectfully traverses the rejection.

The Applicant has amended independent claims 13 and 17 to include additional features that the Applicant considers as being inventive. For example, independent claim 13 (and similarly independent claim 17), recites:

> "A method for adapting a communications network comprising the steps of:
> identifying each network element within a network to be managed;
> determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network;
> decoupling, from said determined DCS/SONET network structures, those add-drop multiplexers (ADMs) used to form hybrid

ring networks; and
managing said hybrid ring networks as network ring structures using a SONET element management system (EMS). (emphasis added).

The Norman reference discloses that a node includes one or more ring terminals, each of which has add/drop connections (i.e., ADMs). Norman further discloses that the ring terminals are connected to each other via the DCS connections, but nowhere in the Norman reference is there any teaching or suggestion that the ADMs are, in fact, included in the DCS elements to form a hybrid DCS element. The Norman reference goes out of its way to explicitly disclose that the ADMs are installed in the ring terminals, but there is absolutely not teaching or suggestion that these ADMs may be operably installed in the DCS elements to form a hybrid DCS. Therefore, Norman fails to teach or suggest the feature "determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network."

Furthermore, the Huang reference fails to bridge a substantial gap as between the Norman reference and the applicant's invention. In particular, the Huang reference merely discloses (referring to FIG. 2), ring 57 includes 4 ADMs 61-67 interconnected by links 69-75. Ring 57 is preferably a bi-directional line switch SONET ring. Ring management system 59 includes a computer programmed according to the method of the present invention. Ring management system 59 communicates with each ADM 61 to 67 through suitable communication links indicated by dash lines in FIG. 2. (See Haung, col. 4, lines 23-28). Nowhere in the Huang reference is there any teaching or suggestion of "determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a

SONET network." In particular, nowhere in the Haung reference is there any teaching or suggestion of a plurality of DCS elements wherein at least one of the plurality of DCS elements includes an ADM that is logically connected to a SONET network.

By contrast, the applicant's invention recites the feature of a hybrid ring network. Specifically, "the DCS 140 comprises a switching circuit 148 coupled to each of a plurality of input/output (I/O) modules 146_1 through 146_m (collectively I/O modules 146), where m is an integer. The network structure 300 depicted in FIG. 3 utilizes two of the I/O modules 146. Each I/O modules 146 is coupled to the switching circuitry 148 within the DCS 140 via, illustratively, a respective STS-3 digital link. Each I/O modules 146 comprises a DCS port 144 and an ADM 142 coupled together via, illustratively, an STS-3 digital link. (See applicant's specification, page 9, lines 23-29).

Nowhere in the combined references is there any teaching or suggestion of "determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network." Therefore, the combined references fail to teach or suggest the applicant's invention as a whole.

As such, the Applicant submits that claim 13 (and similarly, claim 17) is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Therefore, the Applicant respectfully requests that the rejections be withdrawn.

C. Claims 14-16

The Examiner has rejected Claims 14-16 as being obvious under 35 U.S.C. §103 over Norman, Jr. (US 5,742,605, issued April 21, 1998 hereinafter "Norman") in view of Huang et al. (US 6,389,015, issued May 14,

2002, hereinafter "Huang") and in further view of Jakobik et al. (US 6,195,367, Issued February 27, 2001, hereinafter "Jakobik"). The Applicant respectfully traverses the rejection.

The Applicant's claims 14-16 depend from independent claim 13 and recite additional features that the Applicant considers as being inventive. For example, dependent claim 14 (and similarly, dependent claims 15 and 16) recites in part:

> "A method for adapting a communications network comprising the steps of:
> identifying each network element within a network to be managed;
> determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network;
> decoupling, from said determined DCS/SONET network structures, those add-drop multiplexers (ADMs) used to form hybrid ring networks; and
> managing said hybrid ring networks as network ring structures using a SONET element management system (EMS). (emphasis added).

As discussed above, nowhere in the combination of Norman and Huang is there any teaching or suggestion of "determining if hybrid DCS/SONET network structures are present in the network, each said hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network." Therefore, the combination of these two references fails to teach or suggest the Applicant's invention as a whole.

Furthermore, the Jakobik reference fails to bridge a substantial gap as between the Norman and Huang references. In particular, the Jakobik reference merely discloses that "the optical electrical layer also includes the express transport nodes 2 and 3, which serve a transport related purpose by

connection the CO 1 to the express rings 4 and 5 as in arrangements of FIGs. 1 and 2, but which now additionally serve to CO-related purposes. Firstly, these nodes 2 and 3 act as an interface between the collector ring transport nodes 6-11 and the DCS switch 19 on one hand, and the OXC switch 22 on the other hand. Secondly, they each interconnect subsets of the attached collector ring transport nodes 6 through 8 through 9-11. (See, Jakobik, col. 7, lines 28-41).

By contrast, the applicant's claimed invention recites a hybrid DCS/SONET network structures comprising a DCS element having an ADM that is logically coupled to a SONET network. Specifically, "the DCS 140 comprises a switching circuit 148 coupled to each of a plurality of input/output (I/O) modules 146_1 through 146_m (collectively I/O modules 146), where m is an integer. The network structure 300 depicted in FIG. 3 utilizes two of the I/O modules 146. Each I/O modules 146 is coupled to the switching circuitry 148 within the DCS 140 via, illustratively, a respective STS-3 digital link. Each I/O modules 146 comprises a DCS port 144 and an ADM 142 coupled together via, illustratively, an STS-3 digital link. (See applicant's specification, page 9, lines 23-29).

Nowhere in the combined references is there any teaching or suggestion of the steps set forth as recited by the applicant's invention, which include identifying each network element within a network to be managed, determining if hybrid DCS/SONET structures are present in the network, where each hybrid DCS/SONET network structure comprises a DCS element having an ADM that is logically coupled to a SONET network, decoupling from a determined DCS/SONET structures, those ADMs used to form hybrid ring networks, and managing said hybrid ring networks as hybrid ring network ring structures using a SONET EMS. Therefore, the combined references fail to teach or suggest the applicant's invention as a whole.

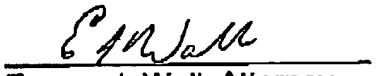
As such, the Applicant submits that these dependent claims are not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the Applicant respectfully requests that the rejections be withdrawn.

CONCLUSION

Thus the Applicants' submit that claims 1-17 are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending n the application, it is requested that the Examiner telephone Steven M. Hertzberg or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted



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